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E7 (Discontinued product)

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Tool Stock and Availability

Please contact your distributor for the orderable part number for this device.

The E7 On-chip debugging interface has been discontinued; the H8/Tiny and F serieses are now supported by the E8 device

Introduction

The E7 is a discontinued low-cost solution for connecting to the Tiny on-chip debug interface
the H8/Tiny, H8/Super Low Power (SLP) and R8C/Tiny series microcontrollers. Cu
wishing to purchase this tool should please note that the E8 now supports these de

The E7 connects to the host machine using the USB interface and so does not req
open the machine casing to install it. The E7 is small and light in weight, it does no
interface cables and so can easily be used in a normal office environment.

Features

- Lower cost compared to other emulation tools
- Includes free-of-charge Full release Renesas H8 compiler with 64K code size li
- Allows easy "plug-and-play" connection to on-chip debug for desktop and notebook via a USB 2.0 full-speed compatible interface.
- Enables fast code downloads and in-system programming of target flash memory.
- Provides 255 software breakpoints and hardware breakpoints(point number a depend on target devices)
- Has a powerful, easy-to-use debugging interface

Target Devices

Series	E7 Type Numbe	Device Name
Tiny Series	HS0007TCU01H	H8/3664F, H8/3664N, H8/3672F, H8/3687F, H8/369 H8/36014F, H8/36024F, H8/36037F, H8/36057F, H8/36049F, H8/36902F, H8/36912F, H8/3687N, H8/3694N, H8/36064F, H8/36077F, H8/36087F, H8/36094F, H8/36109F
H8/300H SLP Series		H8/38076RF, H8/38602RF, H8/38086RF
H8/300L SLP Series		H8/38024F, H8/38004F, H8/38124F, H8/38104F, H8/38327F,H8/38347F
R8C/Tiny series		R8C/10 group, R8C/11 group, R8C/12 group, R8C group

PC Interface

USB interface (USB 1.1, Full speed)

Components

Type number	Components			Note
	Hardware		Software	
HS0007TCU01H	E7 Emulator	14pin cable USB cable (1.5m)	E7 software	-

Note

Do not connect or disconnect the USB interface cable during use of 'Setup tool for
unless you are directed to do by the on-screen instructions. If the USB interface cable is
disconnected in the middle of a loading, the processing will be halted.

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HEW-Emulator tutorial Introduction

Our emulator environment has realized the Integrated Development Environment fi
development of software to debugging by using environment for software developn
By using this environment in program development, creation of the program which
compile, build and debugging which used the emulator become possible in integrat
environment.

This document explains a series of operations that start from creation of the progra
compile, build and debugging by the emulator. For further information on items, ple
each HEW-Emulator manuals linked to.

Guidelines for HEW-Emulator operating instructions

This page describes a sequence of operating procedures from configuration of HE
programming method by HEW to compile/build and debugging using emulator.
For further information on items, please refer to each documents linked to.

Configuration for connecting emulator

A procedure for configuration of emulator to PC connection is as follows.
1 Installation of emulator software

Related Resources

A Note on Using the E7 and the E8 Emulator Software
[16 Jan 2007, Tool News]

Software Update V.3.02 Release 00 (IO definition file revised)
[1 Aug 2006, Tool News]

OS compatibility of Software Tools
Windows Vista Related Info Upgraded at each time

Tool News

Evaluation Software Download
Evaluation Software Download

2 Connection to PC
3 Emulator set-up

Connection of emulator and PC is completed.

Detailed references

Emulator User's Manual chapter3 Preparation before Use in Debugger pa

Chapter3.9 describes system check if that the emulator is connected correctly. Here, use the workspace for a tutorial provided on the product.

Start-up HEW

There are 3 methods for starting HEW as follows.
1. HEW (Toolchain is not in use) Refer to 4.2.1 in Emulator User's Manual
In case of creating a new workspace only in emulator environment.
You do not install HEW compiler package, an only use GUI including in HEW.
Notes: If you choose this case, compiling/building of programs cannot be executed
2. HEW (Toolchain is in use) Refer to 4.2.2 in Emulator User's Manual
In case of creating a new workspace in both of HEW (toolchain) and emulator envi
Install and use HEW compiler package. Comprehensive debugging including modi
compiling and building of programs are possible.
3. HEW (Existing workspace is in use) Refer to 4.2.3 in Emulator User's Manual
In case of using workspace created only by HEW (toolchain) in emulator environm
(toolchain) and emulator environment.
Notes: In case of using the workspace in only emulator environment, compiling/bui
programs can not be executed.
4. In case of using E7 as a programming tool
A procedure for starting HEW is the same as case1.
With starting methods of HEW, an environmental setup of HEW, connection of an
download method of a program, etc. will be changed.

Detailed references

Emulator User's Manual
Section 4 Preparations for Debugging in Debugging part.

High-performance Embedded Workshop2
Section 2 Creating a Project

Connect HEW and Emulator

Emulator is connected by HEW. Procedures for connecting HEW and emulator is a

Additionally, information on debug environment when emulator is in use is saved in
session of HEW in HEW-emulator environment.
Therefore, new session to save the debug environment information on emulator ma
A procedure for creating a new session is as follows.

Procedures for connecting emulator

1. HEW (tool chain is not in use)
At starting HEW, emulator is automatically connected. Please follow the instruction
dialog box below from here.

Procedures for connecting emulator

1. HEW (tool chain is not in use)
At starting HEW, emulator is automatically connected. Please follow the instruction
dialog box below from here.

An existing session for emulator is selected as a session at starting HEW.

2. HEW (tool chain is in use)
Please connect emulator to PC after HEW is started according to either of the follo
procedures.
Method 1: Set "Debug setting" and connect the emulator to HEW.
Please select "Debug setting" from "Option" in HEW menu.

Please set out on [Debug Setting] dialog box, and click [OK] button. Connection be
emulator and HEW is started.

Please follow the instructions on dialog boxes to connect them from this point.

Method 2: Modify a session file and connect the emulator to HEW
Please select a session for an emulator

Method 2: Modify a session file and connect the emulator to HEW
Please select a session for an emulator

Connection between the emulator and HEW is started. Please follow the instructio
dialog box below from here.

3. HEW (use an existing workspace)
A saving condition of a specified workspace is restored, in case of using an existin
Connection method of emulator varies depending on saved contents.
1 Installation of emulator software
2 Connection to PC
3 Emulator set-up
Connection of emulator and PC is completed.

Detailed references

Emulator User's Manual
chapter3 Preparation before Use in Debugger part.

Chapter3.9 describes system check if that the emulator is connectedcorrectly. H
workspace for a tutorial provided on the product.

4. In case of using E7 as a programming tool

Emulator is automatically connected to HEW at starting HEW. Please follow the ins
the dialog box below from here.

A session for emulator is selected at starting HEW.

Session setting

If you want to save information of debug environment to other sessions, please cre
according to the following procedure.

Please select "Debug session" from "Option" in HEW menu.

Click [Add] button on the [Debug session] dialog box.

Please fill in a name of session as you want in the space for new session, and click
Then, you can select the newly added session name from the session pull-down lists on the
bottom of the dialog box.

Additionally, in case of filling in a name freely in the space for existing session, and
button (please select a session for emulator as session file directory here), connec
emulator and HEW is started by selecting the newly added session name from the
down lists on the bottom of the [Debug session] dialog box.

Please select "Debug setting" from "Option" in HEW menu next.

Connection between HEW and the emulator is started by setting [Debug setting] di
click [OK] button.

Please follow the instructions on the dialog box below from here.

Detailed references

Emulator User's Manual
Section 4.4 Debugger Sessions, Section 4.5 Connecting the Emulator in Debu

Creation / modification of program

Please create and modify programs on HEW if necessary. Moreover, please carry
compiling / building of programs, and create the load module.

Note: When toolchain is not in use, programs cannot be compiled / built.

Detailed references

High-performance Embedded Workshop2
Section 3 Modifying the Project, Section 4 Building a Project

Detailed references

Emulator User's Manual
Section 4.4 Debugger Sessions, Section 4.5 Connecting the Emulator in Debu

Program download

Download programs to debug with emulator.
Registered load module in the workspace of HEW and saved memory in S format c
downloaded in HEW emulator environment.
Download of load module
Select "Download" from "Debug" in HEW menu.

Program download

Right-click the load module in the workspace. Select "Download" from the opened p
menu.

Program download

Download of contents of memory
Select "Load" from a pop up menu of memory window.

Program download

[Download program] dialog box is displayed.After setting a file name and offset on
box, please click [Open] button.

n case that you execute debugging a program, which is newly created or modified,
automatically downloaded by checking the following check box.
Select "Debug setting" from "Option" in HEW menu. Check a check box for [Downl
build] on the option tab on [Debug setting] dialog box.

Detailed references

Emulator User's Manual
Section2.4 Memory Access Functions, Section 6.6 Downloading the Tutorial F
in Debugging part.

This is the end of the procedure for setting the environment. Now you can debug p
HEW.

Detailed references

Emulator User's Manual
SectionSection 5 Debugging in Debugging part.

Exiting from environment

There are 2 methods for ending the emulator as follows. Method for deactivating co
an emulator, which is running

Detailed references

Emulator User's Manual
SectionSection 4.6 Ending the Emulator in Debugging part.

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Item	Specifications
Break:	- Hardware Break (Point number depends on target device) - Software Break(Max.255 point) - Force Break
Trace:	- PC Trace (Latest 4 branches) [note] There are some which are not being supported target device.
Host Machine:	- More than Pentium® 3 600MHz - Windows® 2000, Windows® XP - Minimum operating memory is 128MB (Twice or more file size of load module) - Hard disc available memory for install is 50MB or mor - CD-ROM for drive install - 800 × 600 or more display (Recommend more than 1(768) - Interface :USB (USB Specification Rev1.1)*1 - Mouse (or Pointing Device)
User I/F:	- 14Pin Connector (Type: 2514-6002: [3M Co., Ltd.])
Size (mm):	- 97mm × 65mm × 22mm

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Upgrade Information

[Notes]
Revising the Product Discontinued
This is the final revision of the E7 emulator software becaus
discontinue revising the product. Technical support is contir
this and the E7 emulator, but supported MCUs will not be in
further nor modified.
So please purchase the E8 emulator, if necessary. It is the succes
to the E7 emulator and includes the E8 emulator software w

[Latest version]

- **Release date**: 5.July,2006
- **Software name**: E7 emulator software
- **Version**: V.3.02 Release 00
- **New feature(s)**
  - Modification Made to an IO Definition File

  For details, see "ToolNews".

[How to upgrade to the latest version]
Download free updates from the Download site. Upgradable
from any previous versions.

[Information on the previous version]

- **Released Date** : 20.April,2006
- **Version** : V.3.01 Release 00
- **Added feature(s)**
  - Also supports H8/300H Tiny Series H8/36094F, H8/36109F groups.
  - Improvement, problem fix

  For details, see "ToolNews".

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